

M0430012
Task ID#1895



July 16, 2007

Summit County
Derrick Radke
County Engineer
P.O. Box 128
Coalville, Utah 84017

Re: Lot 38 Brown's Canyon Road
Erosion Control Plan

Dear Derrick,

In response to your letter dated June 28, 2007, here is Star Stone Quarries, Inc. Erosion Control Plan for installation of a driveway onto Lot 38 Brown's Canyon road.

1. The fill slopes steeper than 3:1 will have an Erosion Control Mat installed. This is noted on the map that is included as part of this plan. It will be installed according to the manufacturers recommendation, which is attached.
2. The fill slopes will be seeded. The seed mix and broadcast ratios are as follows:

NATIVE SEED MIX

SPECIES	VARIETY	LBS/ACRE
Western wheatgrass	Arriba	6.0
Slender wheatgrass	Revenue	5.0
Mountain brome	Bromar	8.0
Big bluegrass	Sherman	0.75
Bluebunch wheatgrass	P-7	6.0
Prairie junegrass	VNS	0.25
TOTAL		26.0

3. The site has an existing permanently installed perimeter control installed.
4. Sediment will be kept off the road and if it is tracked onto the road it will be cleaned off per Summit County Ordinance 381-A.
5. A cash bond in the amount of \$1,530 (which is at least 120% of the estimated cost to implement the Erosion Control) is included with the Driveway Encroachment Application for Summit County.

Star Stone Quarries, Inc.
4040 South 300 West, Salt Lake City, UT 84107
801-747-7109 Fax 801-747-7101

RECEIVED

JUL 25 2007

DIV. OF OIL, GAS & MINING



6. The first 27 feet adjacent to the highway will be hard surfaced, either paved with asphalt or concrete. The balance of the driveway will be surfaced with gravel. Both surfaces will be kept clean in order to minimize the amount of sediment that is tracked out onto Brown's Canyon Road.
7. The installation of the driveway will require a modification to the guardrail. Star Stone is willing to pay half and requests that Summit County pay the other half of the cost to have Summit County contract with their road maintenance contractor, to modify the guardrail to meet Star Stone's needs and Summit County's requirements.
8. Enclosed is a copy of a completed "Driveway Encroachment Permit Application".

Thank you for assistance with this permit.

Sincerely,

Lon Thomas
President, Star Stone Quarries

cc: DOGM

Star Stone Quarries, Inc.

4040 South 300 West, Salt Lake City, UT 84107
801-747-7109 Fax 801-747-7101

EROSION CONTROL STANDARD

EROSION DRAW

SILT FENCE

Definition: A silt fence is a temporary sediment barrier placed on the slope contours, consisting of filter fabric and wire mesh attached to supporting posts and partially entrenched. Extra-strength filter fabrics do not require wire mesh but they do require closer spacing of the support posts.

Purpose: A silt fence detains sediment by ponding water behind it and allowing sediment to settle out. It may be used to divert sediment-laden water if placed slightly off the contour. It can be used where:

- sheet and rill erosion would occur;
- protection of adjacent property or areas beyond the limits of grading is needed (perimeter control);
- the size of the drainage area is no more than 1/4 acre per 100 linear feet of silt fence;
- the maximum flow path length above the barrier is 100 feet;
- the maximum slope gradient above the barrier is 2:1;
- small swales are carrying silt, the slope is less than 2%, and the drainage area is less than 2 acres;
- no practice other than a silt fence is feasible.

Design Considerations: No formal design is required. Silt fences have a useful life of one season. Their principal mode of action is to slow and pond the water and allow soil particles to settle. Silt fences are not designed to withstand high heads of water, and therefore should be located where only shallow pools can form. Their use is

limited to situations in which sheet or overland flows are expected.

Silt fences should be placed on contour to be most effective. Site perimeters and property boundaries rarely follow slope contour. If silt fences are placed along property boundaries, water may be diverted to the low point and failure may occur.

Silt fences normally cannot filter the volumes generated by channel flows. When installed across a concentrated flow path, undercutting of the fence often occurs. Silt fences should not be designed to impound sediment or water more than 18" high. Sediment shall be cleaned from behind the fence when it reaches 50% of the designed impoundment height (9").

Design considerations include:

- type, size and spacing of fence posts;
- type of filter cloth; The fence should be supported by a wire mesh if the fabric selected does not have sufficient bursting strength characteristics for the application.
- Select a fabric with an Equivalent Opening Size (EOS) which retains 85 percent of the soil by weight, based on sieve analysis.

Construction Specifications:

- The height of a silt fence shall not exceed 36 inches. Storage height and ponding height shall never exceed 18".
- The fence line shall follow the contour as closely as possible.
- If possible, the filter fabric shall be cut from a continuous roll to

EROSION DRAW

avoid the use of joints. When joints are necessary, filter cloth shall be spliced only at a support post, with a minimum 6-inch overlap and both ends securely fastened to the post.

- Posts shall be spaced a maximum of 10 feet apart and driven securely into the ground (minimum of 12 inches). When extra-strength fabric is used without the wire support fence, post spacing shall not exceed 6 feet.
- Turn the ends of the fence uphill.
- A trench shall be excavated approximately 4 inches wide and 6 inches deep along the line of posts and upslope from the barrier.
- When standard-strength filter fabric is used, a wire mesh support fence shall be fastened securely to the upslope side of the posts using heavy duty wire staples at least 1 inch long, tie wires or hog rings. The wire shall extend into the trench a minimum of 2 inches and shall not extend more than 36 inches above the original ground surface.
- The standard-strength filter fabric shall be stapled or wired to the fence, and 6 inches of the fabric shall extend into the trench. The fabric shall not extend more than 36 inches above the original ground surface. Filter fabric shall not be stapled to existing trees.
- When extra-strength filter fabric and closer post spacing are used, the wire mesh support fence may be eliminated. In such a case, the filter fabric is stapled or wired directly to the posts.
- The trench shall be backfilled and the soil compacted over the toe of the filter fabric.
- Silt fences placed at the toe of a slope

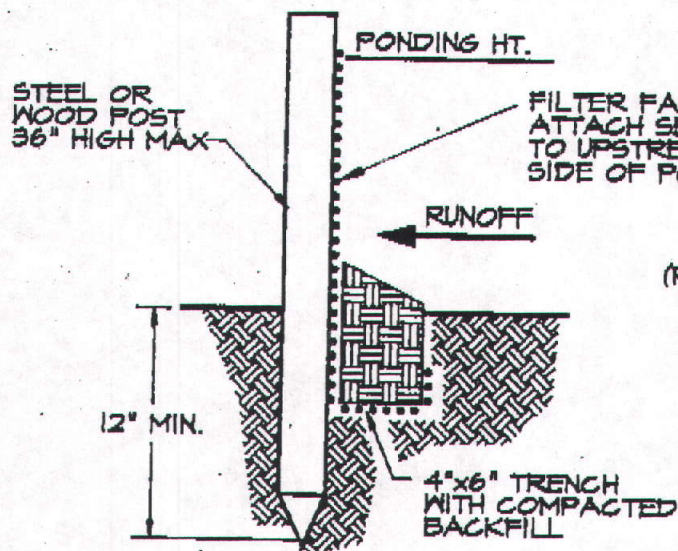
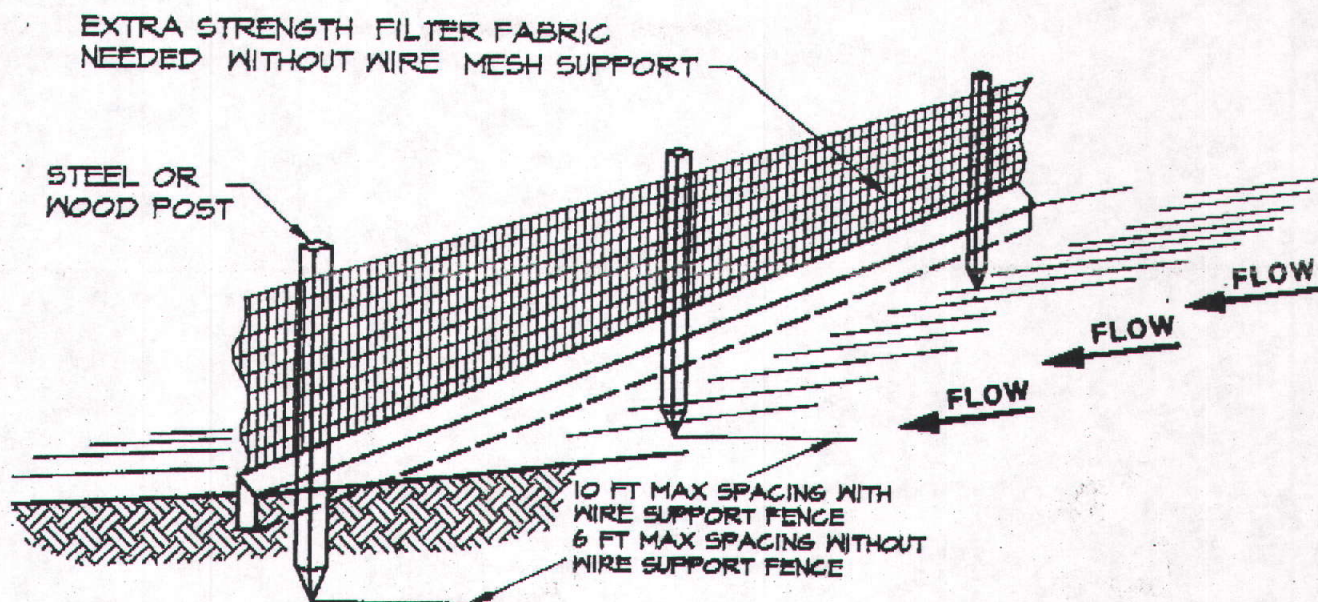
shall be set at least 6 feet from the toe in order to increase ponding volume.

- Silt fences shall be removed when they have served their useful purpose, but not before the upslope area has been permanently stabilized and any sediment stored behind the silt fence has been removed.

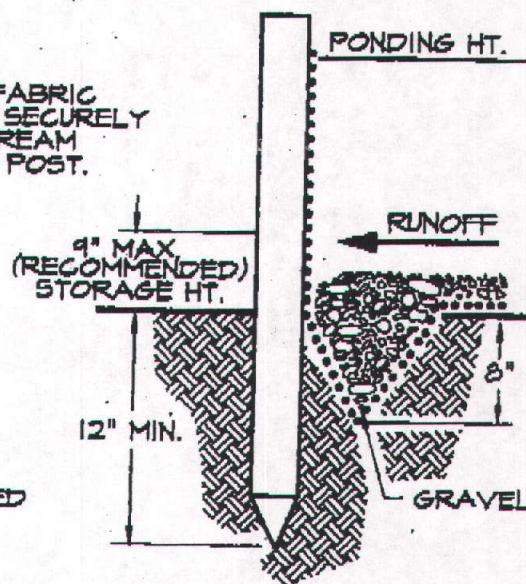
Inspection and Maintenance:

- Silt fences and filter barriers shall be inspected weekly after each significant storm (1" in 24 hour). Any required repairs shall be made immediately.
- Sediment should be removed when it reaches 1/3 height of the fence or 9 inches maximum.
- The removed sediment shall conform with the existing grade and be vegetated or otherwise stabilized.

Source: John McCullah - CPESC #311; North Carolina Erosion and Sediment Control Planning and Design Manual; Manual of Standards for Erosion and Sediment Control Measures- Association of Bay Area Governments (ABAG); and California Storm Water Best Management Practice Handbook, 1993



STANDARD DETAIL
TRENCH WITH NATIVE BACKFILL



ALTERNATE DETAIL
TRENCH WITH GRAVEL

NOTE:

1. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY.
2. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.
3. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.

SILT FENCE

EROSION DRILL**SILT FENCE
.TXT NOTES****Construction Specifications**

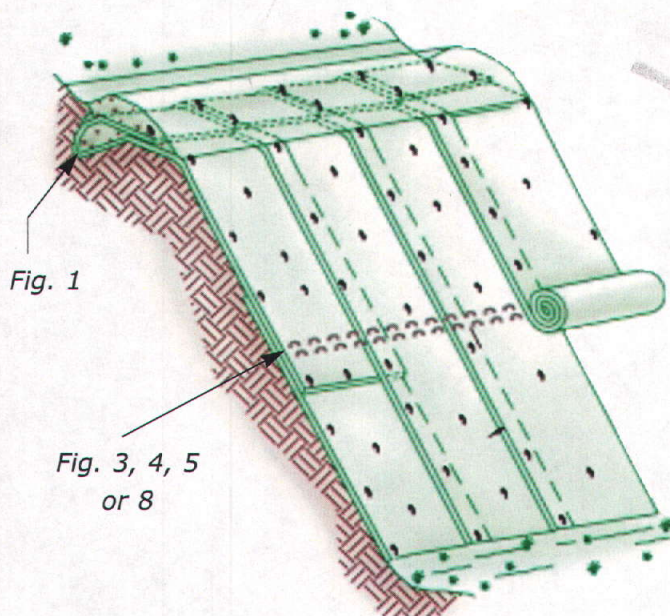
- The height of a silt fence shall not exceed 36 inches. Storage height shall never exceed 18".
- The fence line shall follow the contour as closely as possible.
- If possible, the filter fabric shall be cut from a continuous roll to avoid the use of joints. When joints are necessary, filter cloth shall be spliced only at a support post, with a minimum 6-inch overlap and both ends securely fastened to the post.
- Posts shall be spaced a maximum of 10 feet apart and driven securely into the ground (minimum of 12 inches). When extra-strength fabric is used without the wire support fence, post spacing shall not exceed 6 feet.
- Turn the ends of the fence uphill.
- A trench shall be excavated approximately 4 inches wide and 6 inches deep along the line of posts and upslope from the barrier.
- When standard-strength filter fabric is used, a wire mesh support fence shall be fastened securely to the upslope side of the posts using heavy duty wire staples at least 1 inch long, tie wires or hog rings. The wire shall extend into the trench a minimum of 2 inches and shall not extend more than 36 inches above the original ground surface.
- The standard-strength filter fabric shall be stapled or wired to the fence, and 6 inches of the fabric shall extend into the trench. The fabric shall not extend more than 36 inches above the original

ground surface. Filter fabric shall not be stapled to existing trees.

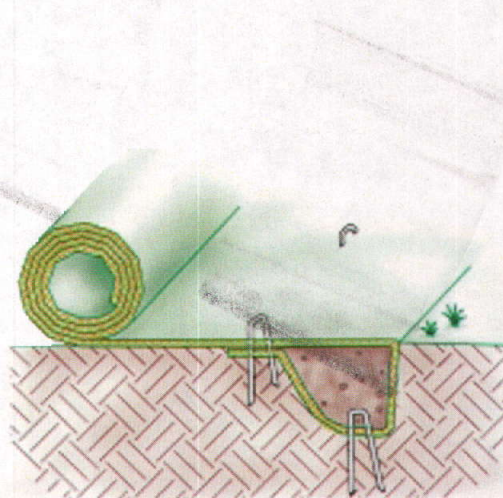
- When extra-strength filter fabric and closer post spacing are used, the wire mesh support fence may be eliminated. In such a case, the filter fabric is stapled or wired directly to the posts.
- The trench shall be backfilled and the soil compacted over the toe of the filter fabric.
- Silt fences placed at the toe of a slope shall be set at least 6 feet from the toe in order to increase ponding volume.
- Silt fences shall be removed when they have served their useful purpose, but not before the upslope area has been permanently stabilized and any sediment stored behind the silt fence has been removed.

Inspection and Maintenance

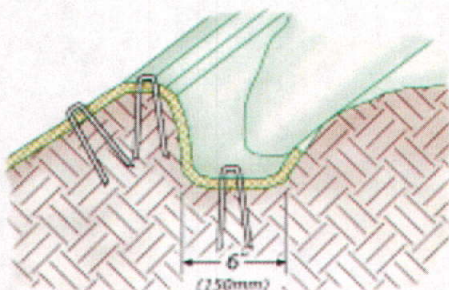
- Silt fences and filter barriers shall be inspected weekly and after each significant storm (1" in 24 hour). Any required repairs shall be made immediately.
- Sediment shall be removed when it reaches 1/3 height of the fence or 9 inches maximum.
- The removed sediment shall be vegetated or otherwise stabilized.



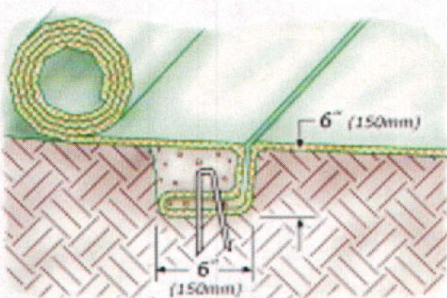
Typical Slope Installation



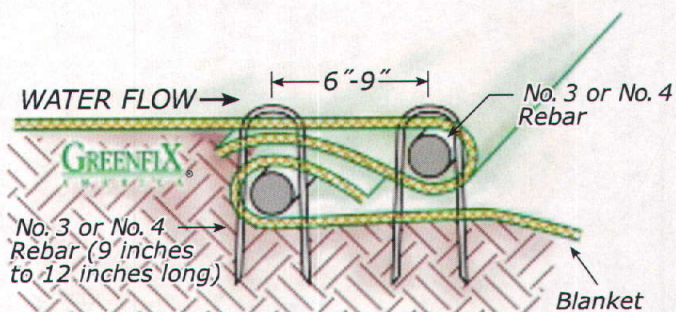
Initial Anchor Trench (Fig. 1)



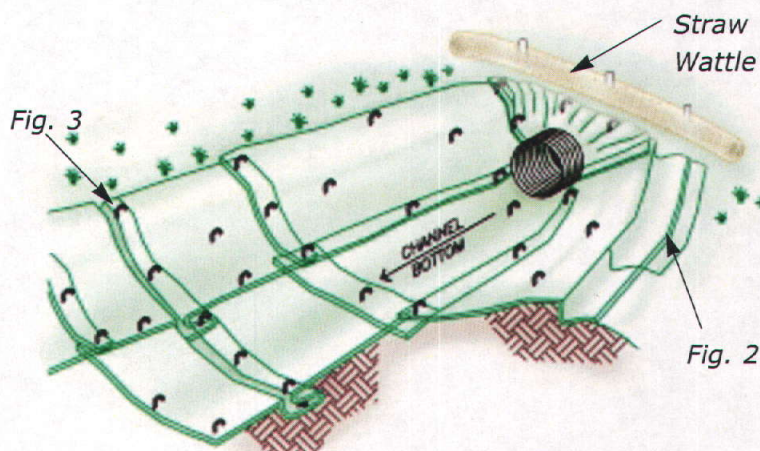
Longitudinal Anchor Trench (Fig. 2)



Intermittent Check Slot (Fig. 3)



Alternate Steep Slope Anchoring Method (Fig. 4)
Tensile forces are applied to full material width.



Typical Channel Installation

Recommended Installation Guidelines

Subgrade - The first installation step is to make sure that the subgrade is properly prepared. Once the subgrade has been verified to be properly graded and compacted and generally free of ruts and projecting stones or clods, the blanket can be deployed. Generally, normal construction equipment should not cause significant rutting of the subgrade.

Other Layers - In some systems, another material such as mulch may underlie the blanket and therefore be placed first. When situations require the blanket to be laid on top of another material, care must be taken to prevent disruption of or damage to the underlying materials. Never use normal construction equipment directly on top of blanket.

Seeding - In temporary, degradable systems, seed is generally spread on or drilled or sprigged into the subgrade prior to unrolling of the blanket. Many long-term, nondegradable systems are unrolled, and filled with soil prior to seeding.

Positioning and Anchoring - In all cases, each blanket should be unrolled as close as possible to its intended final position to minimize the need for dragging which can dislocate underlying materials or dig up or disturb the prepared subgrade and/or seeding. Staking, pinning or stapling blankets to secure their position is commonly done with a frequency and at the relative locations required to assure stability on the terrain in question.

Wind - Large panels of blankets can be lifted up by gusts of wind if not properly secured. Deployed materials are most vulnerable prior to anchoring. Wind displacement can cause damage such as tearing or less obvious, but equally as problematic, damage such as loss of fibers. Identified damage should be patched. Liberal use of temporary weights such as dirt mounds or sandbags is the most common strategy to avoid wind pick-up.

Field Joining and Anchoring

Proper installation of blankets is critical. Blanket panels are joined side to side and end to end by overlapping or "shingling" in the direction of flow. Overlaps are typically secured by staking, pinning, or stapling at regular spacings along the overlap. Longitudinal overlaps must be a minimum of 3" along the overlap length. Blanket ends may be spliced by overlapping 1' (in the direction of water flow) with the upstream blanket placed on top of the downstream blanket. This overlap should be anchored at 1' spacing across the width of the blanket.

Typically blankets are anchored with 11 ga. U-shaped staples, 6" or 8" long depending upon the looseness or compaction of the soil. Proper anchoring of rolled blankets also includes the following practices:

- Terminal trenches (typically 6 inches wide by 12 inches deep) are made at the top and bottom (crest and toe) of all covered slopes and at the end of all lined channels.

- Intermediate trenches, or "check slots" (typically 6 inches wide by 6 inches deep) or two closely spaced rows of anchors may be used transverse to flows at intermittent points down a slope or along a channel to prevent continuous flows beneath the blankets.

- "Patterning" staking, pinning, or stapling of positioned blankets accomplishes uniform anchoring. The pattern depends on the steepness of the slope or channel as shown in staple guidelines.

Penetrations

It is important that at the point of all penetrations through a blanket additional anchorage be provided. The most common penetration involves a pipe or manhole around which the blanket can be easily cut to fit closely and subsequently anchored. Penetrations and other structure interferences are notoriously prone to concentrated erosion. Therefore, special attention to detail is necessary when any of these features are encountered.

Repairs

If a repair is required because the blanket has been accidentally damaged, a patch of the same base blanket type should be cut to fit over and sufficiently beyond the damaged area to permit joining to or anchoring through the parent blanket.

Backfilling

Blankets which are installed prior to seeding must be subsequently seeded and, when directed, backfilled with soil. These blankets must be of the blanket type, meaning they must have an open structure to facilitate soil filling. Typically, once seeded, same day backfilling is preferred. Depending on the system design, the cover soil may be a special topsoil or simply general backfill. In either case, consideration must be made for the proper placement of the soil layer to completely fill the blanket without overfilling (which may prevent germination) or causing construction damage.

For Installation Assistance:



800-929-2184 (760) 348-7600
Fax (760) 348-3097
www.greenfix.com

Supplement To General Installation Guidelines/ Slopes And Channels

Subgrade / Slopes & Channels: On slopes and channels, the site must be shaped to the design specifications (Slope gradient, Density of soil & etc.) The site must be groomed to be free of soil clods, clumps, rocks or equipment imprints of any kind that would prevent the blanket from lying flush against the surface contour.

Seeding / Slopes & Channels: For non soil filled applications on slopes and channels, hydro-seed, board cast or drill seed over prepared soil before blanket is deployed. Make sure to hydro-mulch after seeding and before the blanket is installed to ensure the seed is in direct contact with the soil. Seed mixes with adequate pure live seed ratios must be used to ensure proper germination ratios and successful vegetation establishment. Consult your local distributor or seed supplier to obtain a proper seed mix.

Anchor Trench & Check Slots / Slopes & Channels: Anchor trenches are required to securely fasten the blanket to the subgrade surface. Anchor trenches and intermediate check slots are typically 6-9 inches wide and 6-9 inches deep. The blanket is installed in the trench and fastened to the bottom with staples spaced 1-3 ft. apart. The anchor trenches and checks slots are then back filled and compacted in such a manner not to damage the blanket. (See Slope & Channel Isometric View)

Anchor Trench / Slopes: Anchor trenches should be installed at least 1 ft. beyond the crest of the slope. (See Longitudinal Anchor Trench Fig. 2)

Anchor Trench / Channels: In a channel anchor trenches are installed at the beginning of the channel. (See Initial Channel Anchor Trench Fig. 1 & Longitudinal Anchor Trench Fig. 2)

Check Slots / Slopes: For maximum performance of your product, an intermediate check slot may be required on long slopes that exceed one roll length. Intermediate check slots should be spaced approximately 20 - 60 ft. intervals down the slope depending on the blanket type, slope length and soil conditions. Consult your local distributor or blanket manufacturer directly to confirm the check slot installation procedure. (See Intermediate Check Slot Fig. 3)

Check Slots / Channels: In a channel, check slots are spaced approximately 25 - 60 ft. intervals down stream depending on flow conditions, channel gradient and time to vegetate. (See Intermediate Check Slot Fig. 3 & Channel Isometric View) Field Joining And Anchoring: The blanket is rolled down the slope or channel loosely to maintain contact with the soil at all times. Side to side overlap between rolls are 3-4 inches minimum and anchored on 2-3 ft. intervals minimum. End to end splice overlap between rolls are 1-3 ft. minimum and

anchored with two rows of staples on 1 ft. intervals minimum. Overlaps are shingled in the direction of flow.

Staple patterns will vary depending on application, soil type, slope or channel gradient and etc. (See Staple Pattern Guidelines) A rule of thumb for estimating the amount of staples required for a project is as follows:

Steep Slopes / 1:1 and greater2-4 staples per sq. yd.
High Flow Channel3-4 staples per sq. yd.
Low Flow Channel2-3 staples per sq. yd.

Install additional staples as required to ensure the blanket is always in contact with the soil, regardless of suggested staple patterns.

Anchoring Devices: Use a 6 inch x 1 inch 11 gauge minimum metal staple in heavy compacted soil. In loose soil conditions use a 8 inch x 1 inch 11 gauge minimum metal staple. Other approved anchoring devices in loose soil conditions are as follows:

12 inch x 1.5 inch metal staples.

18 inch pins with 1.5 inch diameter washer.

12-30 inch J-Shape pins made from bent 1/4 inch wire or rebar.

Install staples or pins so that the top of the anchor is flush with the soil surface.

Special Installation & Conditions: The installation guidelines are recommendations only. You should always confirm the installation procedure with your local distributor or blanket manufacturer to ensure maximum performance of the product. All design specifications prepared by a qualified design consultant or engineer supersede these recommended guidelines.

Product selection software, which some manufactures claim to be design software, use versions of the universal soil loss equation, national rainfall and soil survey charts to fabricate a formula that will make a mathematical blanket type selection.

This approach to computerize product selection should never be used to select a blanket type for a specific project application because it circumvents the base line data collection process that all project specifiers regardless of scope are required to do if any hope of success is expected. This type of evaluation does not allow the specifiers to use site specific project data that is directly relevant to the application design and product performance.

The USLE is designed to calculate total tons of potential soil erosion from a site using historical regional data as factors in the equation. These assumptions do not and cannot quantify or guarantee product performance. Design software may be useful in channel design to determine or limit the potential shear stress forces the channel lining materials are subjected to.

Summit County Engineering Division
Driveway Encroachment - SWP3 and ECP Permit Application

60 North Main ~ P.O. Box 128, Coalville, UT 84017
Coalville line (435) 336-3250 ~ Kamas line (435) 783-4351 x 3250 ~ Park City line (435) 615-3250 ~ Fax (435) 336-3043
www.summitcounty.org/engineering

Engineering Permit # _____ Plan Check # _____ Building Permit # _____
Applicant STAR STONE QUARRIES, INC. Phone # 801 262 4300
Mailing Address 4040 SOUTH 300 WEST City MURRAY Zip 84107
Contractor STAR STONE QUARRIES, INC. Phone # 801 262 4300
Mailing Address 4040 SOUTH 300 WEST City MURRAY Zip 84107
Project Address _____ Parcel # _____

- *THE APPLICANT shall be the party responsible for the work and to whom all communications are to be directed.
*DRIVEWAY ENCROACHMENT PERMITS are valid for a period of 180 days from the date the building permit is issued and the SWP3 & ECP PERMITS are valid for the term of the Co-Development Permit (Building Permit, Grading Permit, Excavation Permit).
*DRIVEWAY must be staked at Property Line and at Intersection with street. Driveway staking inspection will be made only upon 24 hour advance request to the Engineering Office. **Driveway staking inspection is required prior to plans being processed**
*ALL ENCROACHMENTS require an inspection prior to placement of hard surfacing (asphalt or concrete). 24 hour notice is required.
*SWP3 and ECP Requirements: (Refer to Ordinance 381-A, Appendix A, B, and C for Requirements and Specifications)
*DRIVEWAY ENCROACHMENT must comply with minimum County standards prior to receiving Certificate of Occupancy from the Building Department. (Refer to Ordinance 181-D, Appendix 'B' for Requirements and Specifications)

PERMIT FEES: \$50.00 \$ 50

WESTERN BASIN TRANS. IMPACT FEE: \$ -

BOND REQUIREMENTS:

\$250 per Encroachment- lots having slopes less than 10% \$ 250

\$500 per Encroachment- lots having slopes between 10-15% \$ -

\$1,000 per Encroachment- lots having slopes over 15% \$ -

BOND REQUIREMENTS:

SWP3 & ECP Bond (120% of Estimated Cost) \$ 1,530

Re-veg/stabilization \$.10 sq ft = \$ 600

Silt fence \$1.50 x 450 = \$ 675

Spec Sheet (\$2.00 per sheet) \$ -

TOTAL DUE \$ 1,830

AMT PAID \$ 1,830

BALANCE \$ 0

SUBMITTAL REQUIREMENT

- | | |
|---|---|
| <input type="checkbox"/> 1. Completed Application | <input type="checkbox"/> 3. Permit Fee |
| <input type="checkbox"/> 2. Detailed Site Plan (3 copies) | <input type="checkbox"/> 4. Completion Bond |
| Silt Fence | |
| Stabilized Construction Entrance | |
| Drive Elevations (Street, 20' and Garage Floor-Parking Pad) | |

By signing, Applicant agrees to comply with all State and Federal Laws and Summit County Construction Standards and Ordinances.

Applicant Signature: [Signature] Date 7-12-07

Engineering Office: _____ Date _____

Staking Inspection: _____ Date _____

Rough Grade Inspection: _____ Date _____

Final Inspection: _____ Date _____

Bond Money Posted	Date Released
ENC _____	_____
ECP/SWP3 _____	_____
Temp Comp _____	_____

This permit is not a grant of easement or other similar interest. Applicant shall acquire easements from affected fee owners as required.